

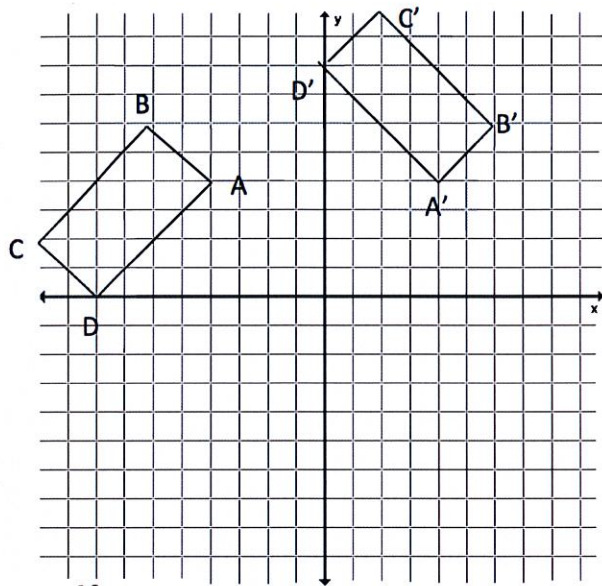
Geometry Midterm Review

Name _____

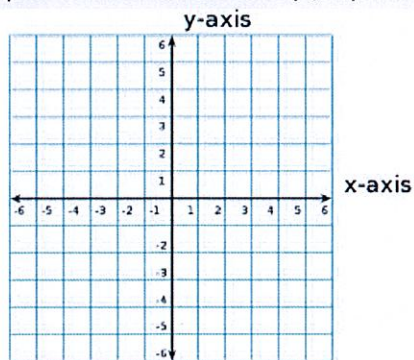
Date _____

1. Use the graph below to complete the sentence.

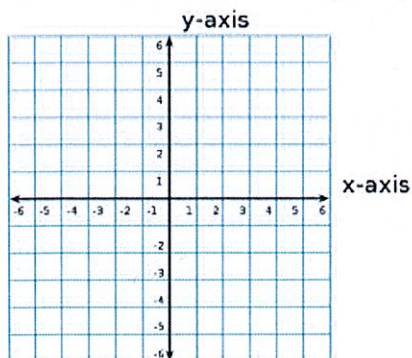
Figure $A'B'C'D'$ is the image of figure $ABCD$ under a rotation _____ about the origin.



2. A point P has coordinates $(5, -2)$. What are its new coordinates after point P is reflected over the y -axis? x -axis?

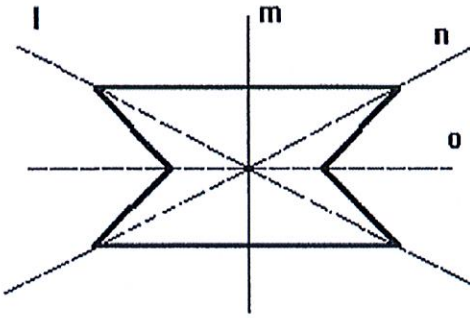


3. What is the translation image of $(-2, -5)$ after the translation $(x+5, y+2)$?



4.

Which of the lines in the picture are lines of symmetry of the given figure?



A) Only m

B) l and n

C) m and o

D) l, m, n and o

5. Which flag has 2 lines of symmetry and an order 2 rotational symmetry?

A) Bahama's



B) Austria



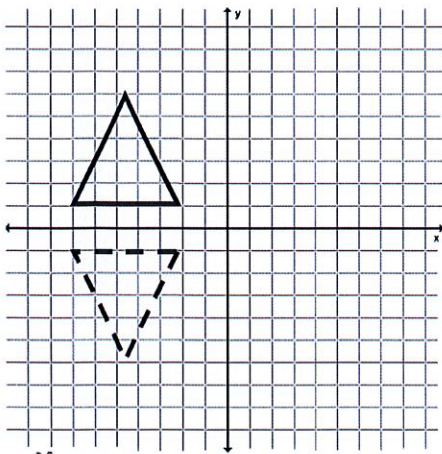
C) Bouvet Island



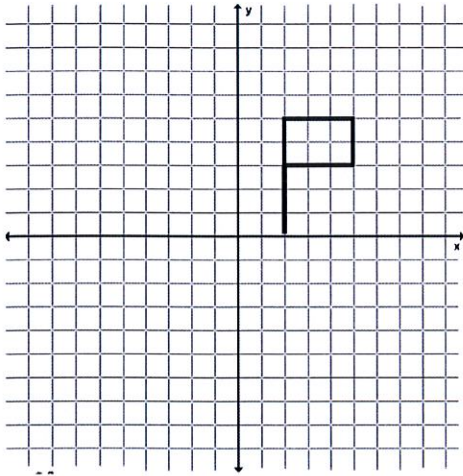
D) Canada



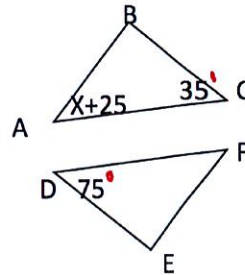
6. The change in position from the solid figure to the dotted figure is best described as a _____.



7. Draw a picture that shows a reflection of the flag across the x-axis, then the y-axis?



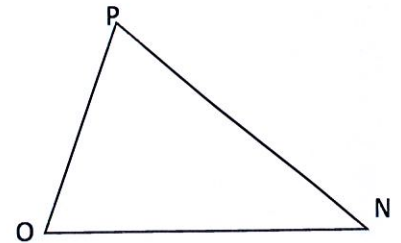
8. In the diagram, $\angle B = \angle E$ and $\angle C = \angle F$. Find the value of x .



9. Given: $m\angle NOP = m\angle NPO$

$NO = 3n + 4$, $NP = 7n - 4$, $OP = 9$; find NO

Show your work AND label the diagram.



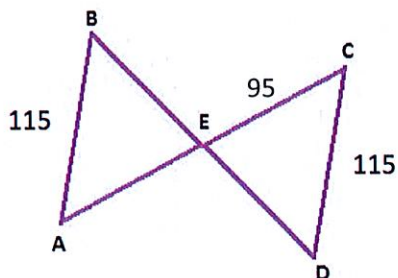
10. If $\angle B = \angle D$, then which postulate or theorem can be used to determine the length of \overline{AE} ?

(a) ASA

(b) AAS

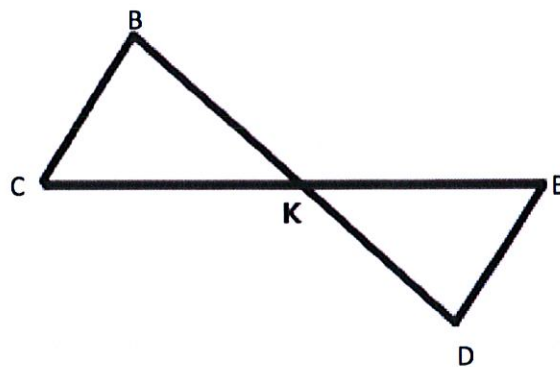
(c) SSS

(d) SAS



11. Refer to the figure shown. Which of the following statements is true? $\overline{CK} = \overline{EK}$ and $\overline{BK} = \overline{DK}$

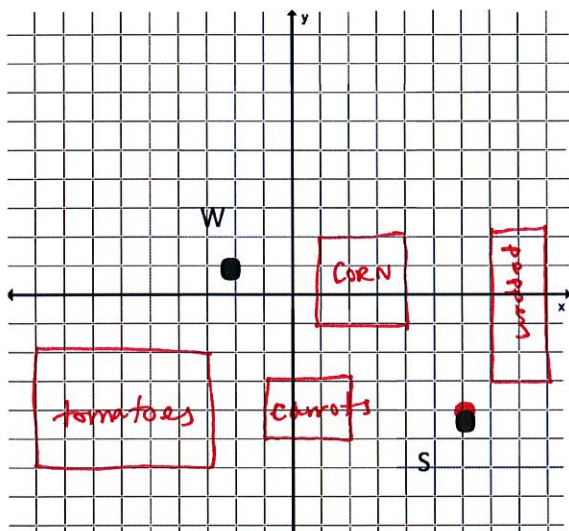
- (a) $\triangle CBK = \triangle DEK$ by ASA
- (b) $\triangle CBK = \triangle KED$ by SAS
- (c) $\triangle CBK = \triangle EDK$ by SAS
- (d) $\triangle CBK = \triangle EDK$ by SSS



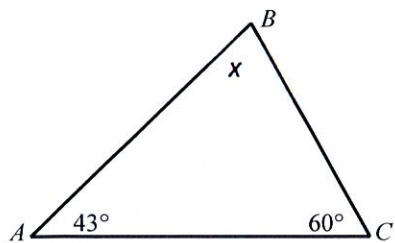
Refer to the figure show to answer numbers 12 and 13.

12. On a certain farm, individual crops are laid out in rectangles. Determine a path from the shed (S) to the well (W) where you wouldn't step on any crops. How far would you have to walk?

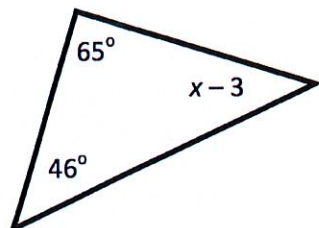
13. How far would it be if you walked diagonally across the crops?



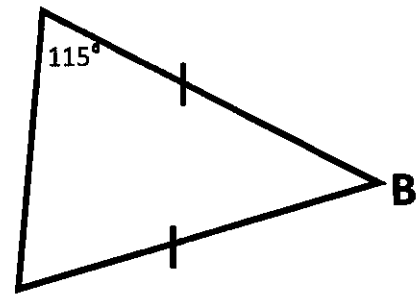
14. What is the value of x in the triangle below?



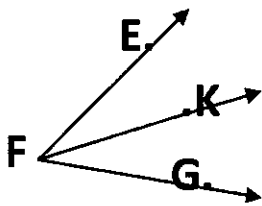
15. Find the value of x . Show your work



16. What is the measure of $\angle B$ in the figure to the right? Show your work.

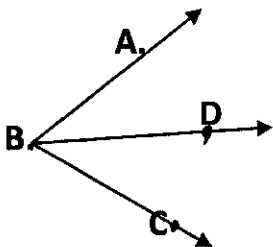


17. If $\angle EFK = \angle KFG$ in the figure below, then

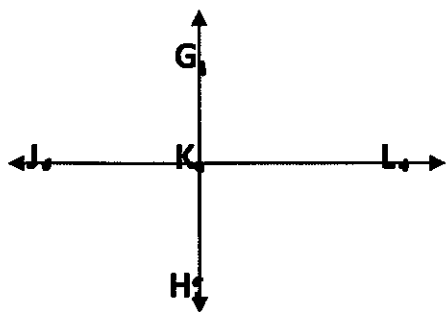


- a) \overline{FK} is a bisector
- b) $\angle EFG$ is a right triangle
- c) $\angle EFK$ and $\angle KFG$ are complementary
- d) \overline{FE} and \overline{FG} are perpendicular

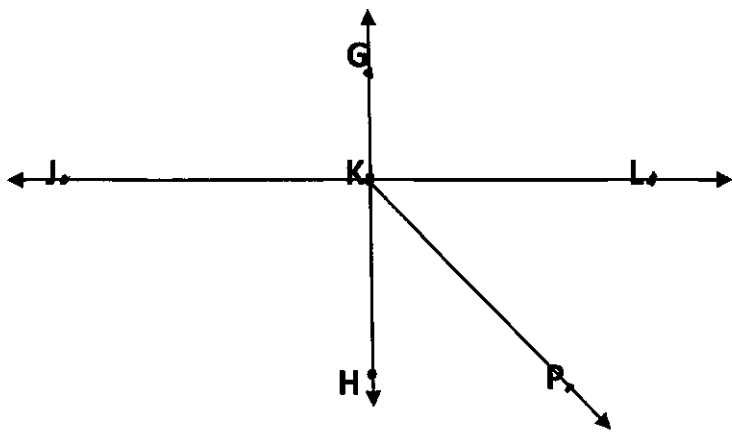
18. If \overline{BD} is the angle bisector of $\angle ABC$, and $m\angle DBC = 42^\circ$, then what is the measure of $\angle ABC$?



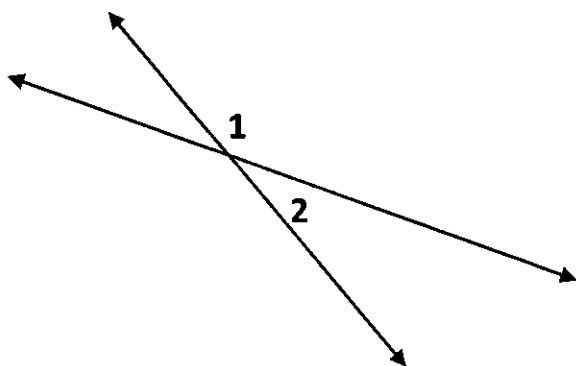
19. If GH is the perpendicular bisector of JL , then what is the measure of $\angle JKH$?



20. If GH is the perpendicular bisector of JL and KP is the angle bisector of $\angle HKL$, what is the measure of $\angle HKP$?

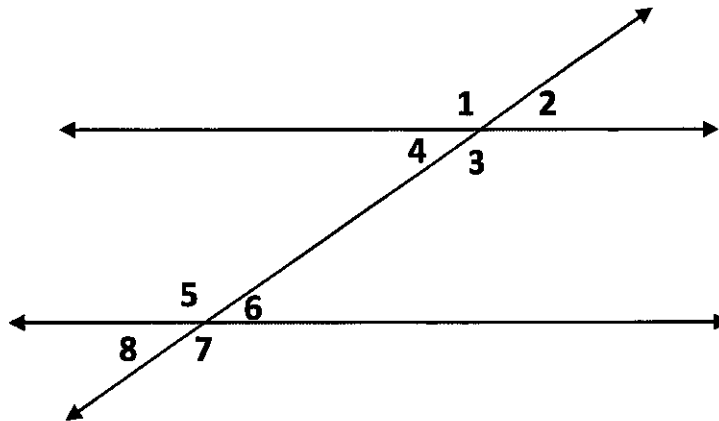


21. If $m\angle 1 = 8x - 6$ and $m\angle 2 = 2x + 6$, find the value of x .



22. In the figure below, line a is parallel to line b . Line c intersects both a and b with angles

1, 2, 3, 4, 5, 6, 7, and 8 as shown. Which of the following lists includes all of the angles that are congruent to angle 5?



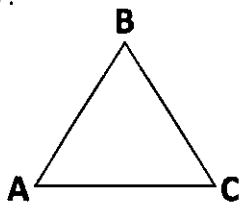
a) angles 8, 4, 2

b) angles 7, 3, 1

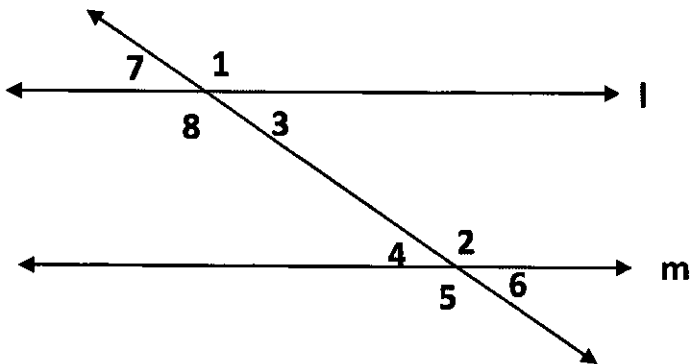
c) angles 5, 7, 3

d) angles 8, 7, 4

23. In the figure below, the measure of $\angle A$ is 75° . If the measure of $\angle B$ is twice the measure of $\angle C$, what is the measure of $\angle C$?



24. Find the measurement of $\angle 4$ and $\angle 5$. The lines l and m are parallel.



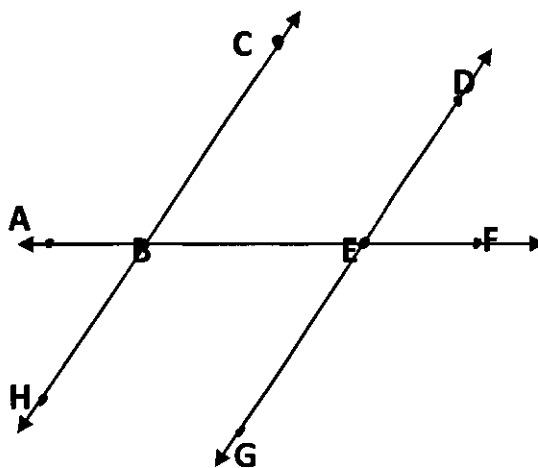
a) The measure of $\angle 4$ is 40° ; the measure of $\angle 5$ is 40° .

b) The measure of $\angle 4$ is 40° ; the measure of $\angle 5$ is 140° .

c) The measure of $\angle 4$ is 140° ; the measure of $\angle 5$ is 140° .

d) The measure of $\angle 4$ is 140° ; the measure of $\angle 5$ is 40° .

25. $m\angle ABC = 134^\circ$. $CH \parallel DG$ (parallel)



Which statement is false?

- a) $\angle HBF$ and $\angle AED$ are alternate interior angles.
- b) $m\angle DEF = 46^\circ$
- c) $\angle ABH$ and $\angle AEG$ are corresponding angles
- d) $m\angle GEF = 46^\circ$

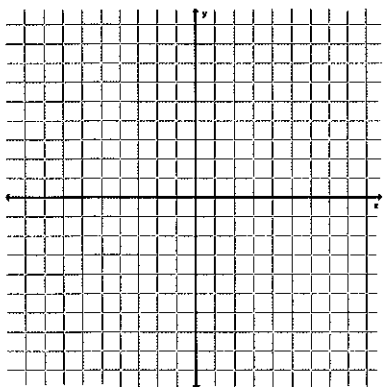
26. Triangle $A'B'C'$ is an image of $\triangle ABC$. If $\triangle A'B'C'$ and $\triangle ABC$ are congruent, then the transformation could have been:

- a) a translation only
- b) a rotation only
- c) a reflection only
- d) a translation, a rotation, a reflection, or a combination

27. You may use the grid below to answer the question.

A triangle has vertices at the following locations: $A(1,5)$; $B(1,1)$; $C(6,1)$.

What is the length of side AC?



28. What is the distance between the points $(-14, -3)$ and $(-2, 6)$? Show work

29. A line segment in the coordinate plane has endpoints P $(-1, 4)$ and S $(-6, 2)$.

What are the coordinates of the midpoint of PS?

30. Point M is the midpoint of AB. If the coordinates of A are $(4, 3)$ and the coordinates of B are $(-2, 5)$, what are the coordinates of M?

31.

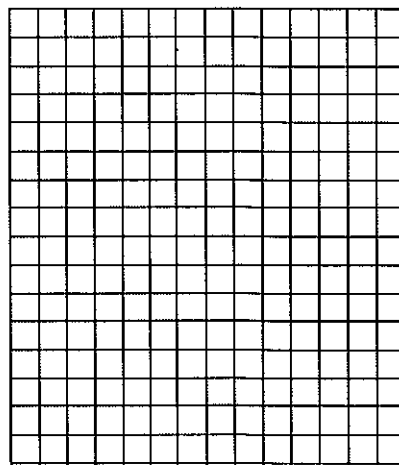
MN is the base of isosceles triangle MNP, with M $(-2, 0)$ and N $(2, 0)$. Which of the following could be the coordinates of point P?

a) $(0, 0)$

b) $(0, 2)$

c) $(2, 2)$

d) $(2, -2)$



32. Point M is the midpoint of line segment BC. If the coordinates of M are $(-1, 1)$ and the coordinates of B are $(3, 4)$, find the coordinates of point C.

33. What is the distance, in units, between the points $(-4, 3)$ and $(2, 3)$?

34. In which of the accompanying figures are segments XY and YZ perpendicular?

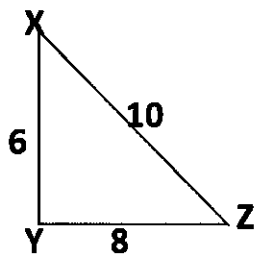


Figure 1

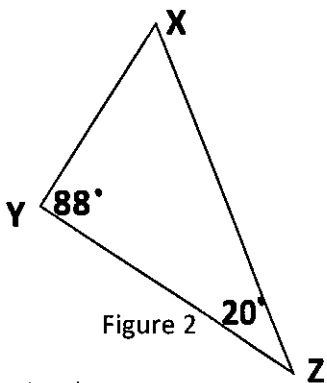
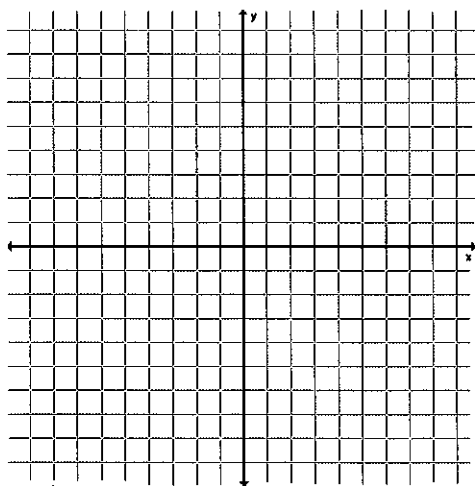


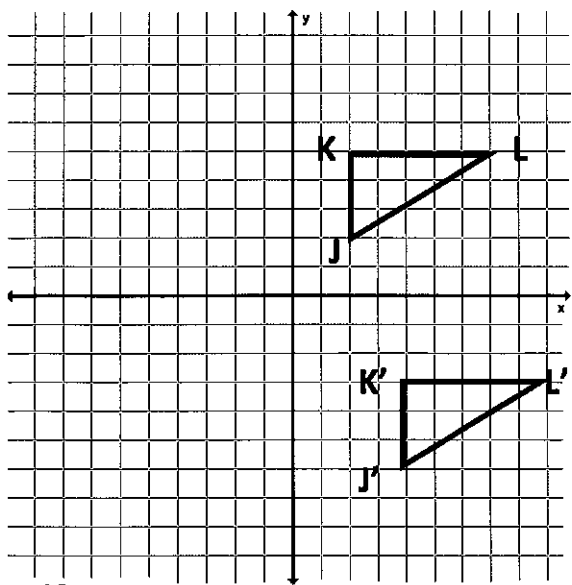
Figure 2

- a) Figure 1 only b) Figure 2 only
c) both figure 1 and figure 2 d) Neither figure 1 nor figure 2

35. If point $(-4, 2)$ is reflected about the line $x = 0$, then reflected about the line $x = -1$, what are the coordinates of the final result? Use your graph to help figure this out.



36. Triangle JKL was translated to create $\Delta J'K'L'$ as showing in the following graph.



Which statement describes the translation of ΔJKL ?

a) $(x, y) \rightarrow (x+2, y-8)$

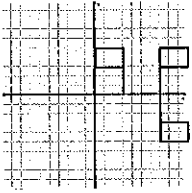
b) $(x, y) \rightarrow (x-2, y-8)$

c) $(x, y) \rightarrow (x+2, y-3)$

d) $(x, y) \rightarrow (x-2, y+3)$

Solutions

1. 90° clockwise or
 270° counterclockwise
2. Reflected over the y-axis is
 $(-5, -2)$. Reflected over
the x-axis is $(5, 2)$.
3. $(3, -3)$
4. C
5. B
6. Reflection over the x-axis
- 7.



8. $x = 50$
9. $\overline{NO} = 10$
10. B
11. C
12. varies
13. $\sqrt{80}$
14. 77°
15. $x = 72$
16. Not possible because the
angles of a triangle cannot
add up to more than 180°
17. A
18. 84°
19. 90°
20. 45°
21. $x = 18$
22. C
23. 35°
24. B
25. D
26. D
27. 6.403
28. 15
29. $(-3.5, 3)$
30. $(1, 4)$
31. B
32. $(-5, -2)$
33. 6
34. A
35. $(-6, 2)$
36. A